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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/709,663  | 05/21/2004  | Min-Hsun Hsieh       | KYCP0003USA1        | 3662             |
| 27765   | 7590        | 08/30/2004           | EXAMINER            |                  |
| NAIPO (NORTH AMERICA INTERNATIONAL PATENT OFFICE)<br>P.O. BOX 506<br>MERRIFIELD, VA 22116 |             |                      |                     | LE, THAO P       |
|   |             | ART UNIT             |                     | PAPER NUMBER     |
|   |             | 2818                 |                     |                  |

DATE MAILED: 08/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                               |                         |           |
|------------------------------|-------------------------------|-------------------------|-----------|
| <b>Office Action Summary</b> | <b>Application No.</b>        | <b>Applicant(s)</b>     |           |
|                              | 10/709,663                    | HSIEH ET AL.            |           |
|                              | <b>Examiner</b><br>Thao P. Le | <b>Art Unit</b><br>2818 | <i>AN</i> |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on 5/21/04.

2a)  This action is FINAL. 2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

4)  Claim(s) 1-6 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5)  Claim(s) \_\_\_\_\_ is/are allowed.

6)  Claim(s) 1-6 is/are rejected.

7)  Claim(s) \_\_\_\_\_ is/are objected to.

8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.  
5)  Notice of Informal Patent Application (PTO-152)  
6)  Other: \_\_\_\_\_.  
\_\_\_\_\_

## DETAILED ACTION

### ***Specification Objection***

The specification is objected to because of the following:

- The title is not descriptive. A new title is required that is clearly indicative the invention in which claims are directed to.
- On page 4, para 0009, "IS" in the sentence « An amorphous interface layer of ITO IS formed » should be changed to --- is---

### ***Claim Objections***

Claim 3 is objected to because of the following informalities:.

In claim 3, "indium tin oxide" is repeated twice, if the second term of "indium tin oxide" is "antimony tin oxide" as indicated in claim 6, it is requested to amended it as indicated so or delete it.

### **Claim Rejections**

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

**Claims 1, 4 are rejected under 35 USC 102 (e) as being anticipated by Yang et al., U.S. Patent No. 6,709,883.**

Regarding claims 1 and 4, Yang et al. discloses a method for forming a light emitting diode having a transparent substrate comprising:

- . forming a semiconductor multilayer on a first substrate 26 producing a first multilayer structure (Fig. 1);
- . forming an amorphous interface layer 14 on a second substrate 10, the second substrate being transparent in nature (lines 46-59, Col. 3), producing a second multilayer structure (Fig. 2);
- . bonding the first multilayer structure to the second multilayer structure, producing a third multilayer structure (Fig. 3);
- . removing the first substrate 26 from the third multilayer structure (Fig. 3).

### **Claim Rejections - 35 USC § 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2, 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yang et al., U.S. Patent No. 6,709,883, in view of Huang et al., U.S. patent No. 6,693,352.

Regarding claims 2 and 5, Yang et al. discloses the method of claim 1 and further comprising a step of forming a contact layer on the third multilayer structure after removing the first substrate. However, Yang et al. fails to disclose the contact layer is a transparent conductive layer. Huang et al. discloses that the contact layer is a transparent conductive layer. It would have been obvious to one having ordinary skill in the art to choose transparent conductive layer as disclosed in Huang et al. in view of Yang et al. because transparent conductive layer provides low contact resistance and low sheet resistance for current spreading resulting in enhanced LED light output and

also provide high optical transparency such as to efficiently transmit light generated in the active region of the device (lines 30-60, Col. 2).

Claims 3,6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yang et al., U.S. Patent No. 6,709,883.

Regarding claims 3 and 6, Yang et al. discloses the method of claim 1 and further discloses wherein the amorphous interface layer is made of transparent adhesive agent such as resin or epoxy or any material with similar property which is applicable to the invention. However, Yang et al. fails to disclose the transparent adhesive is conductive. It would have been obvious to one having ordinary skill in the art to recognize that it is conventional to choose transparent conductive adhesive material because the transparent conductive adhesive material provides not only for adhesion to the first substrate but also provide conductivity with low resistance and low sheet resistance.

If Applicants are aware of better art than that which has been cited, they are required to call such to attention of the examiner.

When responding to the office action, Applicants' are advised to provide the examiner with the line numbers and page numbers in the application and/or references cited to assist the examiner to locate the appropriate paragraphs.

A shortened statutory period for response to this action is set to expire 3 (three) months and 0 (zero) day from the day of this letter. Failure to respond within the period for response will cause the application to become abandoned (see M.P.E.P 710.02(b)).

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thao P. Le whose telephone number is 571-272-1785. The examiner can normally be reached on M-T (7-6).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on 571-272-1787. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Thao P. Le  
Examiner  
Art Unit 2818